

Clean Air Act Section 110(l) Demonstration

To Support

Discontinuation of the Vehicle Inspection and Maintenance Program in Clark and Floyd counties, Indiana

Overview

The Indiana Department of Environmental Management (IDEM) has prepared a revision to the Redesignation Petition and Maintenance Plan for Clark and Floyd counties in conjunction with the 8-hour ozone standard. This revision is to accommodate the discontinuation of the vehicle inspection and maintenance program for Clark and Floyd counties. Section 110(l) of the Clean Air Act states that the Administrator (of the United States Environmental Protection Agency) shall not approve a revision of a plan (State Implementation Plan or SIP) if the revision would interfere with any applicable requirement concerning attainment or reasonable further progress (of a National Ambient Air Quality Standard). Therefore, IDEM has also prepared a demonstration that shows that the discontinuation of the vehicle emissions testing program will not interfere with the applicable requirements of the National Ambient Air Quality Standards for 8-hour ozone and fine particles.

Background

IDEM recently submitted an 8-Hour Ozone Redesignation Petition and Maintenance Plan for Clark and Floyd counties (dated July 2006) to the U.S. EPA requesting that these counties be redesignated to attainment of the standard. Clark and Floyd counties, along with the remaining portion of the Louisville nonattainment area, have attained the NAAQS standard for ozone. Indiana has performed an analysis that shows the air quality improvements are due to permanent and enforceable measures and that significant regional NO_x reductions following implementation of Phase II of the NO_x SIP Call and the Clean Air Interstate Rule will ensure continued compliance (maintenance) with the standard.

Indiana's petition includes a long-term maintenance plan that will be implemented to ensure that the area continues to meet the 8-hour standard for ground-level ozone through the year 2020. Indiana also committed to maintain all emission control measures necessary to ensure continued compliance with the standard following redesignation. The vehicle inspection and maintenance program was one of those emission control measures.

The vehicle inspection and maintenance program was first initiated in 1984 in accordance with the Clean Air Act (CAA). This program was augmented in 1997 to a fully enhanced vehicle inspection and maintenance program and was incorporated within Indiana's 1-hour ozone State Implementation Plan in 1996. Although the U.S. EPA revoked the 1-hour ozone standard on June 15, 2005, Clark and Floyd counties were designated nonattainment for the eight-hour ozone standard effective June 15, 2004. Therefore, the program is required to be in place until all applicable Clean Air Act requirements are met. The vehicle inspection and maintenance program is authorized by state statute, IC 13-17-5, paid for by the general fund,

and implemented through rules promulgated by the Air Pollution Control Board at 326 IAC 13-1.1. This program tests approximately 7% of the registered automobiles in the Greater Louisville Basic Ozone Nonattainment Area and costs the State of Indiana approximately one million dollars per year to operate and maintain. The program yields less than a 1% reduction in total NO_x and VOC emissions for the nonattainment area.

On July 1, 2003, an amendment to IC 13-17-5 became effective that terminates Indiana's vehicle inspection and maintenance rule for Clark and Floyd counties after December 31, 2006, and directs the Air Pollution Control Board to amend 326 IAC 13-1.1 to reflect this change. IDEM is in the process of amending the state rule to accommodate the discontinuation of the vehicle inspection and maintenance program in Clark and Floyd counties. IDEM has also revised the 8-Hour Redesignation Petition and Maintenance Plan for Clark and Floyd counties in order to move the vehicle inspection and maintenance program from Section 6.2 where it was listed as a measure to remain in place over the course of the maintenance plan, to Section 8.0 where it is listed as a contingency measure. IDEM has also revised Section 6.0 to clarify that Indiana in the mid-1990s promulgated rules specific to Clark and Floyd counties that require RACT for new/existing emission sources of VOCs locating in these counties.

In order to support the revision to the 8-Hour Redesignation Petition and Maintenance Plan for Clark and Floyd counties, IDEM has prepared a demonstration that meets the requirements of Section 110(l) of the Clean Air Act, hereinafter referred to as the Section 110(l) demonstration. This demonstration is supported by photochemical modeling and an emissions analysis. Photochemical modeling shows that NO_x emissions will increase by 0.78 tons per summer day and 0.82 tons per winter day with the discontinuation of the vehicle inspection and maintenance program. VOC emissions will also increase by 0.79 tons per summer day and 1.49 tons per winter day. Despite this fact 2007 total emissions are projected to be less than the total 2002 emission levels (base year for PM 2.5), 2003 total emission levels (base year for the ozone maintenance plan), and 2009 total emission levels (deadline for monitoring attainment under the PM 2.5 standard). The 2010 and 2020 total emission levels referenced in the ozone maintenance plan are also projected to be less than the total 2003 emissions levels. Therefore, the discontinuation of the vehicle emissions testing program will not interfere with attainment of the 8-hour ozone standard in Clark and Floyd counties, or elsewhere within the nonattainment area. Furthermore, this demonstration shows that the discontinuation of the vehicle emissions testing program will not interfere with the area's reasonable progress towards attainment of the National Ambient Air Quality Standard for fine particles (PM 2.5)

The vehicle inspection and maintenance program was implemented as a volatile organic compound (VOC) emission control measure specifically in association with the 1-hour ozone standard (revoked effective June 15, 2005). The program does not fail motor vehicles for exceeding tailpipe standards for oxides of nitrogen (NO_x) emissions. However, since VOC and NO_x are precursors for ozone, IDEM's 110(l) demonstration assesses the potential impact of both precursors on future ozone concentrations. Although the vehicle inspection and maintenance program was not implemented as a control mechanism for particulate matter or fine particles, IDEM's 110(l) demonstration assesses the potential impact that the discontinuation of the program may have on the area's ability to attain the annual standard for fine particles.

However, since VOC is not considered a precursor for fine particles, NO_x is the only precursor included in the assessment, even though the vehicle inspection and maintenance program does not serve as a NO_x control measure.